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A WORKER ENGAGEMENT MATURITY MODEL FOR IMPROVING WELLBEING AND SOCIAL SUSTAINABILITY IN CONSTRUCTION

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The ethical management of Occupational Safety and Health (OSH) is one of several factors critical to 'Social Sustainability'. Research on Worker Engagement to improve OSH has identified Meaningful Discussion; Empowerment; Trust; Motivation; and Commitment as five important constructs. This paper reports on the findings of a UK funded research project, to develop a worker engagement maturity model for improving OSH. The model explains the various levels of each construct (termed 'indicator') that a worker goes through relevant to 'worker engagement maturity'. The methods involved 29 in-depth qualitative interviews to gain accounts of episodes of worker engagement, which were categorised using Nvivo with reference to the five constructs identified via an extensive literature review, then ranked based on feedback from expert focus groups. The ranked constructs (indicators) are based on a number of logically progressive worker maturity levels that build on the requirements of already existing levels. Final validation testing of the model will take place during 2017, but it has already undergone prima facie validation with the expert focus groups. The five indicators have their own hierarchical constructs e.g. 'Meaningful Discussion' begins with discussing issues affecting the individual worker to issues that affect other workers and eventually to those 'beyond the site gate' such as design processes. The 'Leadership and Worker Involvement' tool, developed by the UK HSE, focuses on organisational capabilities, but the model described here is specifically targeted at the construction worker. Worker engagement in OSH to improve overall social sustainability should include assessment using this 'worker-focused' model.

Keywords: engagement; health; involvement; maturity; safety; wellbeing

INTRODUCTION & BACKGROUND

Worker engagement research within the construction industry lies in the perception of its importance in predicting positive performance at work and improvement of construction Occupational Safety and Health (OSH). Generally, construction workers will support formal organisational goals if they understand how these goals benefit the business, themselves, their fellow workers, clients, and society as a whole. Organisations can have a very productive and engaged workforce when the workers are treated humanely and when they grasp these benefits. Workers that are actively involved in the organisation form a key element in the achievement of organisational objectives and worker engagement can represent a source of sustainable competitive advantage (Macey & Schneider 2008), thus making the real difference for an organisation's survival (Song Hoon et al. 2012).

Within the construction industry, many firms still adopt the traditional top-down, tightly controlled management models that worked relatively well in the industrial age by suppressing informal communications. In today's knowledge age, this is considered as a death knell as employers and employees are mutually dependent on continuous sharing of ideas and information, and most of the ideas and innovations are generated by meaningful collaborative relationships nurtured within emergent engagement systems. The

construction industry needs to place major importance on identifying and improving the organisational engagement where the management (formal) and the workers (informal) overlap, see (Cameron et al. 2006; ECOTEC 2005). Under the right conditions, workers will begin to overlap more and more with the management elements of an organization's systems, processes, applied technologies and management structure. This overlapping spot is not reached through any sort of formal negotiation, rather, it is emergent. Consequently, it is within this area of engagement between the management and the workforce that most of the productive work and innovation takes place in most organisations, see (MacLeod & Clarke 2009).

There is also an important element of reciprocity in trust (Scholefield 2000). For workers to be engaged and to reinforce their commitment within an organisation; the employer should be willing to invest in the worker's wellbeing, making the workers feel valued and in return the workers will reciprocate directly with renewed employer loyalty and by working harder and more efficiently. The investment cost to the employer for helping the worker is repaid in multiples through greater performance levels. This can lead to higher levels of engagement, greater focus on achieving organisational goals and increased motivation at work which can significantly improve mental and physical wellbeing. According to Ehin (2013), for an organisation to succeed, its systems and practices need to have flexible capacity not only to support its organisational/business goals but also the physiological and mental needs of its workforce. From a management viewpoint, it has been recognised that every worker in an organisation persistently tries to maintain dynamic equilibrium within the social contexts they happen to be immersed in.

There are both legal and ethical requirements for management to collaborate with the construction workforce for the improvement of OSH. This study therefore considers approaches to the development of a worker engagement maturity model for the construction industry that will secure improved worker performance in a cost effective manner. Worker engagement is considered as an important aspect of maintaining that corporate knowledge base and of sharing it within the industry. The development of a worker engagement maturity model for the improvement of construction OSH is desirable because the industry is a fast-paced changing project organisation where management personnel and subcontractors are itinerant throughout the various stages of a construction project. For effective worker engagement in health and safety to become the norm, the effectiveness of corporate OSH engagement programmes should be assessed using a valid and reliable tool. Without the ability to assess construction workers' growth and effectiveness, opportunities to improve construction OSH performance and the potential benefits on construction site will be lost.

Research shows that worker engagement has many positive job outcomes such as job satisfaction and performance (Gruman & Saks 2011; Schaufeli & Salanova 2007), active coping style e.g. (Storm & Rothmann 2003) and creativity e.g. (Bakker & Xanthopoulou 2013). Given these significant contributions to organisational success, it is crucial for researchers and practitioners to comprehend the factors that lead to worker engagement. Although engagement has been associated with a wide range of positive job outcomes, however, studies have not focused on the contributory roles of meaningful discussion, empowerment, trust, motivation and commitment as five important indicators of worker engagement, even when trust on the organisation and empowerment have been found to

be vital in many positive job attitudes (Shockley-Zalabak et al. 1999; Fedor & Werther 1996; Scholefield 2000). So, understanding the role of these five indicators is a key issue to generating positive job attitudes for engagement.

THE FIVE INDICATORS

1. ***Meaningful Discussions*** - When discussions (face-to-face) are mediated by response or feedback and have direct impact on the capabilities of workers, such discussions can be considered as meaningful. Experience shows that within the construction industry, effective meaningful discussions are wholly dependent on individuals, teams and organisations. Also, because of the temporary and inter-disciplinary nature of most construction projects, the construction industry is often characterised by groups of workers that are peripatetic, unacquainted, working together on a project over a limited period of time before disbanding to work on other projects, (Dainty et al. 2006). The notion of meaningful discussions therefore ensures that the flow of information is effectively managed, messages are appropriately conveyed and workers are able to interpret and act on such information in a way that is consistent with the expected intents. Meaningful discussion is considered as a fundamentally social activity which includes engaging in conversations, listening to co-workers, networking, collecting information, and directing subordinates on issues relevant to safety and health of the workforce. Meaningful discussions will thrive better in a workplace when there are some predictive elements of co-worker knowledge, team tenure, co-worker and supervisory support, group orientation and group cohesion, see (Burt et al. 2008). Meaningful discussions can therefore be suggested as an improvement in communication, building relationships and trust, raising awareness of a number of cultural developmental issues and getting feedback from individuals on site including the supply chain. Maloney & Cameron (2003) suggested that meaningful discussions can only take place when workers possess some elements of capability, i.e. training, experience and knowledge.

2. ***Empowerment*** – The concept of empowerment has its roots in practical matters such as intrinsic motivation, job design, participative decision making, social learning theory, and self-management (Liden & Tewksbury 1995). The core concept of empowerment involves giving the workers some sense of autonomy specific to their roles, increasing the motivation of workers at work by delegating authority to the lowest level in an organisation where a competent decision can be made (Conger & Kanungo 1988; Thomas & Velthouse 1990). The importance of measuring psychological empowerment was developed by Spreitzer (1995) capturing four sets of essential cognitions: ‘meaning’ (fit between work-role requirements and personal beliefs and values), ‘competence’ (work-specific self-efficacy), ‘self-determination’ (sense of choice in initiating and regulating actions), and ‘impact’ (perceived influence on strategic, administrative, and operating outcomes at work). Empowerment is considered as a motivational construct associated with ‘enabling’ a construction worker rather than simply delegating. Enabling such workers implies creating conditions for heightening motivation for task accomplishment through the development of a strong sense of personal efficiency.

3. ***Trust*** - Working together often involves interdependence, and construction workers must therefore depend on others in various ways to accomplish their personal and organisational goals. The workforce composition and the organisation of the workplaces are getting increasingly diverse within the UK construction sector. This increase in construction workforce diversity requires workers with very different backgrounds to come into contact and deal closely with one another (Jackson & Alvarez 1992). Therefore, trust is regarded as the measure of the willingness to take risk (i.e., be vulnerable) in a relationship (Mayer et al. 1995). Trust is a psychological state that involves the willingness of a worker to be vulnerable to another party (which can be a co-worker or manager) when that party cannot be controlled or monitored; an expectancy that another can be relied on. The perceptions of operative/supervisor characteristics comprising trustworthiness are antecedents of trust which are ranked in the forms of ability (skills and competencies), benevolence (grounded in mutual care and concern between workers), and integrity (e.g. worker's perception that the manager adheres to a set of principles that the worker finds acceptable) and all three components contribute to the prediction of trust.

4. ***Motivation*** – The theory of self-determination (Deci & Ryan 1985; Ryan & Deci 2000; Deci & Ryan 2008; Gagne & Deci 2005) which suggests universal psychological needs indicates that workers are motivated and display wellbeing in organisations to the extent that they experience psychological need satisfaction within those organisations. Motivation is the act of being moved to do something. This can be subdivided into two sub categories: unmotivated whereby a worker feels no impulse or inspiration to act and motivated where the worker is energised or activated towards an end goal. The Self-determination theory (SDT) focuses on types of motivation, rather than just amount, of motivation, paying particular attention to autonomous motivation, controlled motivation, and lack of motivation as predictors of performance, relational, and wellbeing outcomes. The SDT examines worker's life goals or aspirations, showing differential relations of intrinsic versus extrinsic life goals to performance and health and safety. The concept of motivation is hardly a unitary phenomenon because workers have different amounts and different kinds of motivation, (Ryan & Deci 2000). That is, workers vary not only in level of motivation (how much motivation), but also in the orientation of that motivation (what type of motivation). The concept of construction worker motivation is modelled after SDT based on the different reasons or goals that give rise to an action. The most basic distinction is between intrinsic motivation, which refers to a worker doing something because it is inherently interesting or enjoyable, and extrinsic motivation, which refers to doing something because it leads to a separable outcome, (Ryan & Deci 2000). The quality of experience and performance can be very different when a worker is behaving for intrinsic or extrinsic reasons.

5. ***Commitment*** - The commitment of workers are the psychological bonds that they have to workplace targets (Klein et al. 2009), including organisations, individuals and groups within organisations, and goals and behaviours (Becker 1992; Vandenberghe 2009). Commitment of the construction workforce was ranked in three levels: citizenship commitment; compliance commitment; and conditional commitment. Citizenship commitment refers to workers' psychological attachment to their

organisations caused by their identification with the objectives and values of their organisations. In other words, the workers are loyal to and choose to remain with their organisations because they want to (Meyer et al. 1993). Compliance commitment refers to the worker's psychological attachment to the organisation based on experiences that underline the appropriateness of remaining loyal or morally obliged to repay the organisation for benefits received from the organisation (Meyer et al. 1993). Workers with high compliance commitment will remain in the organisation because they believe it is morally right to do so and this can also be associated with the norms of reciprocity; workers helping each other out. Conditional commitment is a function of the perceived cost of a worker leaving an organisation. Workers feel a sense of commitment to their organisation because they feel they have to remain (Meyer et al. 1993). For the worker to do otherwise would be to give up favourable levels of personal status, seniority, remuneration, work schedule, pension, and other benefits acquired.

OBJECTIVE

This paper reports on the study which is developing a worker engagement maturity model against which to assess 'meaningful discussion' in relation to OSH engagement. This is part of an inclusive model developed to encapsulate the levels of meaningful discussions, empowerment, trust, motivation, and commitment. This maturity model will potentially serve as a guidance tool that will be useful to workers and managers on construction sites in order to improve meaningful discussion on OSH, wellbeing and social sustainability in construction.

METHODS, DESIGN & INTERVIEWS

The objective of the research dictated a qualitative approach towards obtaining rich data giving accounts of 'worker engagement' episodes and describing circumstances and context. The research implemented the phenomenological research inquiry (qualitative design) which describes the lived experiences of construction operatives and supervisors about the phenomenon of worker engagement as described by workers; see (Creswell 2014). This was considered most suitable for this study because the type of description articulates the experiences for several operatives and supervisors who have all experienced different types of worker engagement. Phenomenological research design is based on strong philosophical underpinnings and it involves conducting interviews, see (Giorgi 2012).

Access to construction operatives and supervisors was facilitated by industry OSH experts who are also members of the Steering Group. A purposeful sampling strategy was adopted for selecting construction sites (made up of house building to large scale civil engineering projects) and workers from sites across the UK. The participants interviewed were engaged operatives and working supervisors i.e. an engaged operative is described as a worker who shows interest in health and safety issues, contributes to H&S and/or regularly attends H&S meetings; whilst a supervisor is a worker who encourages engagement and regularly discusses H&S issues with other co-workers.

Phenomenological studies typically involve three to 10 participants (Creswell 2014); but this study conducted an in-depth, semi-structured, face-to-face and open-ended, non-leading interviews with 29 operatives and supervisors until saturation was attained, (Charmaz

2014). Each interview lasted an average of 40 minutes and the process was audio recorded with note taking on site and later transcribed.

The development of the worker engagement maturity model involved using inductive and deductive logic. The inductive process involved working back and forth between the themes emerging from interviews conducted and the information from literature until a comprehensive set of themes were established (Creswell 2013). This involved collaborating and interacting with industry experts (Steering Group) via presentations and workshops in order to shape the emerging themes of the maturity model from the interviews.

The validation of the worker engagement maturity model and categorisations was implemented through workshops with members of the Steering Group iteratively. The rankings of the statements from operatives extracted from the interviews went through an iterative process with the expert focus groups using the Delphi technique. The Delphi technique is a widely used method for data gathering from teams of experts designed as a group communication process with the aim of achieving convergence of opinions; see (Hsu & Sandford 2007; Hasson et al. 2000). The visual representation of maturity model was developed deductively with members of the Steering Group from the categories of information acquired from interviewing the research participants to reach a logically certain conclusion. This was considered ideal working from the more general to the more specific context of worker engagement based on practical examples.

ANALYSIS & DISCUSSION

The ranking of maturity for worker engagement was conceived and developed by the researchers in collaboration with the industry experts. This resulted in assigning levels and criticality to the different indicators necessary for workers to progress through the different levels of growth and engagement, see Tables 1-5. The representation of factors radiates from a lower level to an optimal level which determines the level of maturity of operatives or supervisors. The lower levels generally reflect their immediate needs and surroundings and eventually to factors of higher levels needing interventions from the management. The significance of involving industry experts was to address complex issues of diverse views regarding assigning and categorising the levels of the different factors that impact on the maturity of construction workers as seen in Tables 1- 5.

Table 1: Meaningful Discussions Ranking Scale

Level	Criticality	Meaning
1	Personal work area; housekeeping; and work environment	Hazards that directly affect/related to the worker
2	Welfare	Issues related to site welfare
3	Hazard spotting; site hazards; and hazard causes/procedures	Hazards that are associated to other workers
4	Proactive site solutions	Proactive discussions or proactive actions taken to resolve issues
5	Beyond the site gate: boardroom/other sites; designs; and mental health	Issues that are beyond the site gate needing some management interventions

Table 2: Empowerment Ranking Scale

Level	Criticality	Meaning
1	Meaning ["Knowing"]	Worker's beliefs and values for health & safety is important, the worker knows the requirements of a work role and behaviours but don't take action
2	Competence ["Doing"]	Worker has the skills, capability, and personal mastery; compliant, takes action (reactive). Worker's belief in his or her capability to successfully perform a given task or activity
3	Self-determination ["Decision making"]causes/procedures	Proactive about work methods, pace and effort (within/inside the gate). Worker's sense of choice about activities and work methods.
4	Impact ["Influencing"]	Strategic, administrative or operations outcomes (beyond/outside the gate); making a difference; suggestions/decisions are followed up or supported by top management (impact). The degree to which the worker believes he or she can influence organisational outcomes.

Table 3: Trust Ranking Scale

Level	Criticality	Meaning
1	Lack of trust	Absence of A, B, C; vulnerability is negative
2A	Ability	Trust in the ability of others to work safely and without problems
2B	Benevolence	'Genuine', company cares about worker; 2-way relationship; just culture
2C	Company Integrity	Confident that raising H&S concerns will be praised; honest; do what they say; management approachable and respected
3	Complete trust	All A, B, C are present; vulnerability is positive

Table 4: Motivation Ranking Scale

Level	Criticality	Meaning
1	No motivation	Lack of motivation
2A	Externally Controlled - Extrinsic	Organisation driven e.g. money
2B	Introjected - Extrinsic	Guilt avoidance, ego enhancement
2C	Identified - Extrinsic	Strategic personal gains
2D	Integrated - Extrinsic Intrinsic	Self-motivated, self-determined
3	Motivation	Inherent, self-driven, job satisfaction; happiness; enjoyment, competence, autonomy

Table 5: Commitment Ranking Scale

Level	Criticality	Meaning
1	Conditional Commitment	Commitment only when certain conditions apply e.g. remunerations, pensions; seniority etc. Commitment is dependent on self-interest; changeable; comes and goes based on situations
2	Compliance Commitment	Obliged to work to the rules due to investment in training, rewards and other benefits 'normative'
3	Citizenship Commitment	Commitment above and beyond compliance e.g. proactively promoting safety message; affective commitment i.e. enjoying, satisfaction from contributing to improved H&S standards

Figure 1 shows an exemplary output of the worker engagement cycle in practice. The worker engagement cycle starts with meaningful discussion as the initial core of the subjects discussed by the workers e.g. worker not happy with the PPE provided by the organisation and management considers the replacement cost as too high. Meaningful discussion will positively impact on H&S decisions thus making workers feel empowered to raise such issues as inappropriate PPE. The result of empowerment starts with competence which further leads to influencing H&S decisions which builds on the level of trust. This is when workers feel genuine benevolence and perceive that management is actually listening and responding to their immediate needs. The increase in trust regarding organisational integrity influences the motivation of the worker to move from extrinsic to intrinsic motivation where they inherently enjoy their tasks and look after their PPEs. The move from extrinsic to intrinsic motivation increases the commitment of the workers which eventually leads to more meaningful discussions e.g. a new cycle where proactive discussions about lone-working previously unknown to management is raised by the workers. It is only when issues related to personal work areas and welfare have been addressed and there is that element of trust (Scholefield 2000) in the management to act on problems, that a worker will have the confidence to raise other immediate issues that either impact them personally or their work environment. Engaging with workers in resolving immediate issues will reinforce some sense of empowerment, meaning, competence, impact and belief that they are being listened to (Conger & Kanungo 1988). This is when workers feel empowered and emotionally committed (Schaufeli 2013) to identify and raise other issues that pose as hazards to others.

CONCLUSIONS

Based on the initial results from this study, it has been identified that most construction workers are struggling to attain optimum levels of meaningful discussions, empowerment, trust, motivation and commitment except those that are highly involved as safety representatives or union representatives within the workplace. Worker engagement will need to go wider and farther for the operatives and working supervisors to meaningfully discuss issues up to the highest levels for every indicator in order to attain social sustainability.

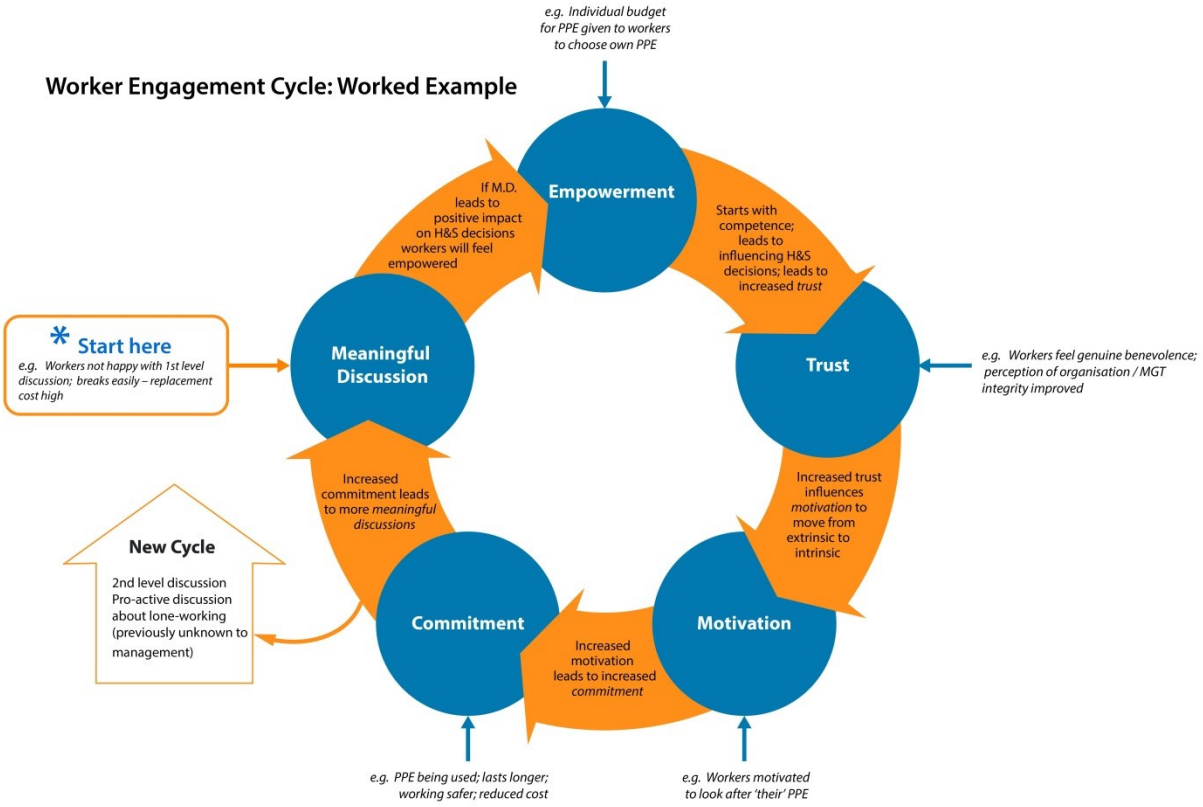

Figure 1: Exemplary output of Worker engagement Cycle

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